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April 12, 2012

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: CC Docket No. 02-6
Notification of *Ex Parte* Presentation
Ohio E-Rate Consortium

Dear Ms. Dortch:

Pursuant to §1.1206(b)(1) of the Commission's rules, I hereby submit this notice of an oral *ex parte* presentation by the Ohio E-Rate Consortium ("OERC") to Commission staff.

On April 10, 2012 Greg Spencer, Michael Crumley and Jon Bowers, representing OERC, and their counsel, Mark Palchick and Peter Gutmann of this firm, had a meeting at the FCC's Washington, DC headquarters with the following staff of the Commission's Wireless Telecommunications Bureau: Lisa Hone, Cara Voth, Anita Pantankar-Stoll (present by speakerphone), Alec MacDonnell (present by speakerphone), Rebekah Bina and James Bachtell.

The meeting was held because the OERC is seriously concerned that the Joint Initiative of the FCC and the Department of Education to promote digital textbooks is at substantial risk unless the FCC clarifies that wireless Internet Access, other than just mobile hotspots, qualifies as a Priority One E-rate service.

Prior to the meeting, the attached memorandum and diagram were sent by email to Ms. Voth for distribution to attendees and hard copies were distributed before the meeting began. At the outset, Mr. Bowers outlined the emerging need of schools and textbook publishers to provide students with wireless access on devices of their choice. Mr. Crumley then explained the operation of the wireless Internet Access service provided by the members of the OERC to schools in Ohio.

During the rest of the meeting, OERC's representatives and counsel responded to staff questions and addressed the following areas:

- Unlike Priority Two equipment that enables direct interconnection between devices within a school facility, the proposed Wireless Access Point ("WAP") service connects devices directly to the Internet rather than to each other and therefore qualifies as Priority One.

- The proposed WAP service has the same functionality as wired Internet service, which clearly is classified as Priority One. As Mr. Palchick noted, the only difference with traditional classroom connections to the Internet is the use here of RF rather than hard wiring for the penultimate connection to the end-user device.

- The proposed service is "BYOD" – Bring Your Own Device – intended to operate with any device a student selects, rather than requiring a vendor-provided (at considerable cost) specific chip or equipment.

- Real-world experience shows that the proposed service costs approximately one-fortieth as much as mobile hotspots (less than $6,000 per year per 500 students for the WAP versus more than $230,000 for mobile hotspot service), and thus is far more cost effective and affordable to smaller school systems that lack the resources of large urban ones.

- The proposed system readily meets the definition of an eligible service in the current Eligible Services List [DA 11-1600, released September 28, 2011], which explains that:
    - "Basic conduit access to the Internet is eligible regardless of technology platform" so long as it provides for the transmission of information as part of a gateway to an information service, when the transmission does not involve the generation or alteration of the content of the information, but which may include data transmission, address translation, protocol conversion, billing management, and navigational systems that enable users to access information services;
    - Wireless Internet Access to the Internet is eligible under the same provisions as wired access;
    - Wireless Internet Access service designed for portable electronic devices is eligible if used for educational purposes and the off-campus use is removed from cost allocation; and
    - Mobile hotspot service (exclusive of hardware costs embedded in or connected to the end-user device, which OERC's proposal specifically does not include, as it is designed to work with all consumer-selected equipment) is specifically cited as illustrative, but not exclusive, of permitted Priority One service.

- Wired Internet access has always been a Priority One service where the Service Provider provides basic Internet access from the Provider-owned DMARC switch, through the Billed Entity-owned LAN switch, through the Billed Entity-owned internal wiring, through non-E-rated equipment such as a router to a wired end-user device. The proposed WAP service provides gateway conduit service in exactly the same way, except that the non-E-rated equipment attached to the Billed Entity-owned internal wiring is the WAP device, which allows connection to wireless end-user devices. That is, the only differences in the services are that one service is wired all

the way to the end-user equipment whereas the other service uses a wireless connection to the end-user. Therefore the WAP service is explicitly permitted by the ESL as a Priority One service so long as no E-rate funds are used to purchase any equipment used in the delivery of the gateway conduit to the Internet.

In conclusion, OERC asserted that the WAP service offered by the Ohio Service Provider is the most cost-effective way to provide wireless Internet access to the Ohio schools. So long as no E-rate funds are used to purchase any equipment used in the delivery of the gateway conduit to the Internet, the service, as proposed, is a Priority One service. Treatment of the WAP service as Priority Two internal connections would: (i) be contrary to the nature of the service; (ii) be contrary to the 2012 ESL; (iii) be fiscally wasteful; (iv) be contrary to the requirements of competitive parity; and (v) seriously impair the efforts of Ohio schools to move towards digital textbooks and assessments.

Respectfully submitted,

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MEMORANDUM

Since the 2011 Eligible Services List, wireless access service designed for portable electronic devices has been an eligible priority one E-rate service. In the 2012 Eligible Services List the FCC added Mobile Hotspots designed for portable electronics as an eligible priority one E-Rate service. Some confusion has occurred based on the 2012 Eligible Services List as to whether "Mobile Hotspot" is the only of type wireless Internet Access that is permitted as a priority one E-rate service, or whether other wireless Internet access services designed for portable devices qualify.

The Ohio ITCs would like the FCC to clarify that the Wireless Access service that they intend to provide to schools in Ohio is a priority one eligible E-rate Service. The Ohio ITCs are concerned that, unless it is made clear that wireless Internet access, whether a Mobile Hotspot or other type of wireless access is a priority one E-rate Service: (i) the Chairman's initiative to bring digital textbooks to schools will be seriously impaired; (ii) the most cost-effective method for delivering wireless access will be blocked; and (iii) one technology will be favored over another in violation of the Commission's competitive parity mandate.

Background

The Chairman's joint initiative with Secretary of Education Duncan to bring digital textbooks into the classroom cannot be accomplished without first establishing the ability for students and teachers to connect wirelessly to the Internet. The importance and timeliness of the initiative is unquestioned. A recent white paper discussing HP Cloud Options pointed out the "increasing presence of tablet computers, smartphones and other mobile devices in the classroom" and cited to a 2011 Horizon Report asserting that "'mobiles continue to merit close attention as an emerging technology for teaching and learning,' projecting a one-year-or-less horizon for time-to-adoption."[1]

The recently released Digital Textbook Playbook highlights the key role that wireless service serves for the expansion of digital learning environments.[2] According to the Playbook, "[m]any experts believe that wireless connectivity within schools using Wi-Fi will be the prominent connection method, especially with the explosion in use of tablets and other portable devices that connect exclusively through Wi-Fi. Wi-Fi can also help keep costs down as compared with the costs of hard wiring all classrooms."[3] The Playbook specifically notes that "E-rate funding can be used to discount the costs of broadband telecommunications and Internet

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[1] *K-12 and the Cloud: A Catalyst for Transformational Change*, Hewlett-Packard Development Company, L.P. (2011), at 5, *available at* http://www.techlearning.com/uploadedFiles/TechLearning/Common/K12_Cloud_Computing_Whitepaper.pdf (citing to 2011 Horizon Report, The New Media Consortium, 2011).
[2] Digital Textbook Playbook, The Digital Textbook Collaborative, February 1, 2012.
[3] *Id.* at 27.

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services," examples of which are shown as either a 3G or 4G service or a school-based WiFi network.[4]

In the 2012 Eligible Services List ("ESL") the Commission added "Mobile hotspot service" as a type of wireless Internet access eligible for E-rate funding, recognizing the needs of schools and libraries to implement Internet access services that could service wireless devices throughout their campuses.[5] The 2012 ESL stated that "Mobile hotspot service designed for portable electronics is eligible if used for educational purposes, if off-campus use is cost-allocated. Hardware costs of the mobile hotspot embedded in or connected to the end-user device are not eligible." Relying on the 2012 ESL, schools and libraries have sought out service providers to provide wireless Internet access service, such as mobile hotspot service, and many have filed Form 470s requesting funding for the service. In addition to Sprint and Verizon, which have responded to these Form 470s by proposing wireless Internet access utilizing mobile hotspots, many other service providers have responded by offering wireless Internet access via wireless access point ("WAP") service. The Ohio Information Technology Centers ("ITC")[6] provide E-rate eligible services to Ohio schools and have responded to Form 470s requesting wireless Internet access. They now seek confirmation that the WAP service that they provide is eligible for priority one E-rate funding.

Clarifying that WAP service, like mobile hotspot service, is a priority one eligible wireless Internet access service is an essential element necessary to make the digital textbook initiative a reality. WAPs are the most: (i) cost-effective, (ii) flexible, (iii) scalable option for schools that would like to bring wireless Internet access onto their campuses. Moreover, treating them the same as mobile hotspots is required if the Commission is to maintain its long-standing policy of ensuring competitive parity.

Wireless Access Point Service

The Ohio ITCs currently provide Ohio schools with an E-rate-funded wired high-speed Internet service. The Internet connection for the wired service is typically owned by the ITC up until the district edge/school building at which point the ITC service connects to an ITC-owned equipment. The ITC then distributes the wired broadband service through either school-owned facilities or ITC-owned facilities. The limitations of this service are self-evident, as it is restricted to providing only wired Internet access service to a school population that utilizes only wired devices. As described above, the FCC and others have conclusively found that the uses of

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[4] *Id.* at 29, 38.

[5] *Schools and Libraries Universal Service Support Mechanism Eligible Services List for Funding Year 2012* ("2011 ESL") (Sept. 28, 2011) at paragraph 21.

[6] Information Technology Centers ("ITCs") comprise the Ohio Education Computer Network ("OECN"), which was established by the Ohio General Assembly to (i) promote the value and benefits of the OECN; (ii) advocate for continuous improvement; (iii) support statewide technology programs and initiatives; and (iv) promote innovative technologies, partnership arrangements, and cooperative purchasing agreements to help support the technology initiatives of the OECN and Ohio schools. The ITCs act as service providers to many Ohio E-rate Billed Entities,

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wireless technologies, including digital textbooks, are in the schools' and the nation's best interests. Accordingly, Ohio schools have sought options to service the population of students and teachers seeking to connect wireless devices to the Internet. These schools have submitted FCC Form 470s requesting the ability to meet these needs. In response to the posted 470s, Ohio ITCs have successfully bid and entered into contracts for service to provide wireless Internet access to schools which service both the schools and student-owned end-user devices. The end result is that student- and school-owned wireless devices located within the campus will be able to connect to the Internet.

The WAP service is purely to provide wireless Internet access and does not include separate charges for equipment.[7] The ITC-provided broadband then runs from the district-owned switch through district-owned fiber within the building. The ITC then connects wireless access points to the district-owned fiber at various points within the building. The wireless access points distribute wireless Internet access to wireless devices throughout the building. In Distribution Scenario 2 the ITC provides ITC-owned fiber from the ITC cloud to the district edge and then installs ITC-owned fiber (non E-rated) alongside district-owned fiber (also not E-rated) within the building. The wireless access points then connect to the ITC-owned fiber and then distribute broadband access wirelessly to end-user devices within the building.

Eligibility As A Type Of Wireless Internet Access Service

The WAP service provided by the ITCs is a type of wireless Internet access, which fits within the parameters laid out in the 2012 ESL and therefore should be eligible for E-Rate funds under the 2012 ESL. The WAP service is designed to deliver wireless Internet to portable electronics that are used by students and employees on the schools' campuses for educational purposes. The *Order* which implemented the 2012 ESL determined that, "mobile-hotspot service is eligible because it is a type of eligible wireless Internet access service that provides basic conduit access to the Internet."[8] The WAP service, likewise, is a type of wireless Internet access service that provides basic conduit access to the Internet for wireless devices that would otherwise not be able to access the Internet. As stated in the *Schools and Libraries Universal Service Support Mechanism Second Report and Order and Further Notice of Proposed Rulemaking*: "reasonable requests for any supported service – over any technology platform – to be used by any school or library staff while in a library, classroom, or on school or library property, shall be eligible for discounts."[9]

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[7] All wireless service is capacity- and environmentally-dependent. As the number of devices that are connected through to the Internet increases so does the bandwidth required. Each WAP device is restricted in the number of wireless devices it can connect through to the Internet. Accordingly, some ITCs base their Internet usage charges (*i.e.*: the capacity required) on the number of devices deployed. There is no charge for the equipment, just for the capacity back to the Internet.

[8] *2012 ESL Notice*. at ¶21.

[9] *See Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, Second Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 9202, 9209 (2003), at ¶19.

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WAP Technology Allows ITCs To Provide Managed Wireless Internet Access to the School Campus

The wireless access point equipment used by the ITCs is smart technology. It is not simply the equivalent of a wireless router that passes through the wired Internet service already provided by the ITC. Utilizing the WAP equipment, the ITC manages the wireless Internet access in a variety of ways that provides the school with flexibility to address any access concerns and ensures that the school is fully compliant with the Children's Internet Protection Act[10] requirements. Specifically, the ITC uses IP protocol management to separate traffic into at least three distinct groups: guest traffic, student traffic and staff traffic. This IP protocol management is at the heart of Internet access service. The ITC also ensures firewall management (eligible for E-rate funding as part of the Internet access service), which is particularly important when Internet access is expanded wirelessly. The ITC ensures that the wireless network maintains a security level equal to or greater than the security level achieved in the wired Internet access service.

WAP Service Is Significantly More Cost-Effective Than Mobile Hotspot Service

The cost of the WAP service for schools is significantly more cost-effective than mobile hotspot service. Notably, the WAP service is device-neutral – meaning that the schools may introduce any device capable of accessing the Internet wirelessly in order to use the service. In contrast, the devices that use mobile hotspot service must be capable of accessing a particular provider's network and are accordingly limited to specific devices. Below is a comparison of the cost of service for three providers: an ITC, Sprint and Verizon. The Sprint and Verizon figures were derived from E-rate bid contracts currently in place with some schools in Ohio.

Ohio ITC (based on 500 students)

- Wireless Internet Access Service (device-neutral) - $460/mo
- Total Average Annual cost - $5,520

Sprint Wireless Program (based on 500 students)

- Mobile Hotspot Service (includes 500 netbook devices)[11] - $21,495/mo ($42.99/unit/mo)
- Total Annual Cost - $257,940

Verizon Wireless Program (based on 500 students)

[10] 47 CFR §§54.520(c)(1)(i), 54.520(c)(2)(i).
[11] The contracts signed with Ohio schools do not break out the individual cost for the netbook devices (which are non-e-ratable) from the cost for service.

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- Mobile Hotspot Service - $19,975/mo ($39.95/unit/mo)
- Total Annual Cost for service - $239,700

The WAP Service Is Not Duplicative Of Wired Internet Access Service

The 2003 *Second Report and Order and Further Notice of Rulemaking* defined "duplicative services" as "services that deliver the same functionality to the same population in the same location during the same period of time."[12] While the WAP service is delivered to the same location as the wired Internet service, the WAP service does not have the same functionality as the wired service nor does the WAP service address the same population as the wired service. While in the case of wired Internet access, an end user device must be able to physically connect to a wired connection in order to receive Internet access, an entirely different population of end-user devices can connect wirelessly via the WAP service. Accordingly, the two services do not constitute duplicative services.

Competitive Parity Requires That The WAP Service Be Treated No Differently Than Any Other Wireless Internet Access.

The functional differences between "mobile hotspots," wired Internet access, and the wireless Internet access provided by the WAP service are virtually non-existent. The Commission has already stated that the mobile hotspots are an eligible type of Internet access because it provides basic conduit access to the Internet. The WAP service similarly provides basic conduit access to the Internet. Moreover, it provides basic conduit at a lower cost and with greater functionality than "mobile hotspots." If the Commission fails to acknowledge that the WAP service is an eligible priority one service it would be favoring one, more expensive and less functional, technology over another.

For the reasons stated above, it is respectfully requested that the FCC acknowledge that the WAP service, as described above, is eligible as a priority one E-rate Service.

[12] *See Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, Second Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 9202, 9209 (2003), at ¶22.

Wireless Distribution via WAP